

Amendments to the Claims

Please amend claims 8 and 13 as indicated below. This listing of claims, if entered, will replace all prior versions of claims in the application:

1-5. (Canceled)

6. (Previously Presented). A process for the oxidative dehydrogenation of an alkane having from 2 to 4 carbon atoms to an alkene, comprising

contacting said alkane in the presence of oxygen to a compound that includes at least about 50% nickel oxide by weight at a temperature of about 400°C or less, wherein said contacting is conducted in the presence of said alkene, and

obtaining a selectivity in said dehydrogenation of greater than 70% and a conversion of greater than 10%.

7. (Canceled)

8. (Currently Amended) The process of claim 7 6 wherein said selectivity is greater than 80%.

9. (Previously Presented) The process of claim 8 wherein said selectivity is greater than 85%.

10. (Previously Presented) The method of claim 6 wherein said conversion is greater than 15%.

11. (Previously Presented) A process for the oxidative dehydrogenation of an alkane having from 2 to 4 carbon atoms to an alkene, comprising providing a reactor and a reactor feed comprising a gas mixture, wherein said gas mixture comprises said alkane, said alkene and oxygen; contacting said gas mixture to a catalyst that includes at least about 50% nickel oxide in said reactor, wherein said contacting is performed at a temperature of about 400°C or less; and obtaining a selectivity greater than 70% and a conversion greater than 10%.

12. (Canceled)

13. (Currently Amended) The process of claim 12 11 wherein said selectivity is greater than 80%.

14. (Previously Presented) The process of claim 13 wherein said selectivity is greater than 85%.

15. (Previously Presented) The process of claim 11 wherein said conversion is greater than 15%.

16-66. (Canceled)

67. (Previously Presented) A method for the oxidative dehydrogenation of ethane to ethylene, optionally with ethylene as a co-feed with said ethane, comprising

contacting ethane in the presence of oxygen to a catalyst that includes at least about 50% nickel oxide by weight with either niobium oxide or tantalum oxide.

68. (Canceled)

69. (Previously Presented) The method according to claim 67, wherein the contacting step is carried out at a temperature of about 400°C or less.

70. (Previously Presented) The method according to claim 6, wherein said alkane is ethane and said alkene is ethylene.

71. (Previously Presented) The method according to claim 6, wherein said catalyst further comprises niobium oxide, tantalum oxide or a combination thereof.

72. (Previously Presented) The method according to claim 6, wherein said temperature is between about 250°C and 400°C.

73. (Previously Presented) The method according to claim 11, wherein said alkane is ethane and said alkene is ethylene.

74. (Previously Presented) The method according to claim 11, wherein said catalyst further comprises niobium oxide, tantalum oxide or a combination thereof.

75. (Previously Presented) The method according to claim 11, wherein said temperature is between about 250°C and 400°C.

76. (Previously Presented) The method according to claim 67, wherein said catalyst comprises niobium oxide and tantalum oxide.

77. (Previously Presented) The method according to claim 73, wherein said temperature is between about 250°C and 400°C.